

## Year 12

## Lesson 1&amp;2

Timing	Unit	Knowledge	Assessing Understanding
Autumn Term 1	Practice non-exam assessment (NEA)	<b>First two weeks will be dedicated to H&amp;S (see below)</b> Analysis of Context (completed for holiday work) Research Plan Existing Products Research User Research Practical investigation First concepts Disassembly Design brief and specification	Formative and summative assessment against AQA AS marking criteria
Autumn Term 2		Design proposals Development through Modelling Development through sketching Development through materials experimentation Evaluation/analysis throughout against the specification	
Spring Term 1		Development: all areas (continued) Manufacturing specification Manufacturing Prototype development as a result of user testing Prototype development as a result of testing and evaluation	
Spring Term 2		Manufacturing Prototype development as a result of user testing Prototype development as a result of testing and evaluation Final Testing and Evaluation	

Summer Term 2	A-Level non-exam assessment (NEA)	<p>Analysis of Context          Research Plan          User Research          Existing products research          Practical investigation          First concepts          Disassembly          Design brief and specification</p>	Formative and summative assessment against AQA A-Level marking criteria
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**Lesson 3 & 4**

Autumn Term 1	Health & Safety in the Workshop (8 lessons over two weeks)	<p>Students will develop their skills in the workshop, ensuring that they can independently and safely use tools and machinery.</p> <p>Students will complete a range of tasks using tools and machinery in the workshop, logging their skills in a H&amp;S folio, including:</p> <ul style="list-style-type: none"> <li>- Drills (pillar and hand)</li> <li>- Bandfacer/Abrasion</li> <li>- Sawing (scroll saws, tenon, coping)</li> <li>- Chisels</li> <li>- Routing</li> <li>- Use of glues</li> <li>- Use of screws and nails</li> </ul> <p>This will be taught alongside unit 1.9 Health &amp; safety. From this, students will:</p> <ul style="list-style-type: none"> <li>- Understand relevant H&amp;S legislation</li> <li>- Be able to write a risk assessment</li> <li>- Use relevant PPE for machinery.</li> </ul>	Students complete an H&S Folio through demonstration of skills
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	<p>Technical principles 1</p>	<p><b>Metals</b> Theory:</p> <ul style="list-style-type: none"> <li>● Mechanical and Physical Properties</li> <li>● Classification of metals</li> <li>● Workshop and industrial testing</li> <li>● Performance characteristics of metals (+ types)</li> <li>● Stock forms</li> <li>● Finishing</li> <li>● Permanent and temporary joining</li> <li>● Heat treatment</li> <li>● Wasting processes</li> <li>● Forming processes</li> <li>● Quality Assurance &amp; Quality Control (Overview)</li> <li>● Aluminium Composite Board, Tungsten Carbide</li> </ul> <p>Practical skills:</p> <ul style="list-style-type: none"> <li>● Make a metal product using turning, brazing, dip coating, drilling, threading, cutting, filing</li> </ul>	<p><b>Woods</b> Theory:</p> <ul style="list-style-type: none"> <li>● Classification of woods</li> <li>● Performance characteristics of woods (+ types)</li> <li>● Stock forms</li> <li>● Finishing</li> <li>● The use of adhesives and fixings</li> <li>● Permanent and temporary joining</li> <li>● Property Enhancement</li> <li>● Wasting processes</li> <li>● Forming processes</li> <li>● Jigs and fixtures</li> </ul> <p>Practical skills:</p> <ul style="list-style-type: none"> <li>● Manufacture of a range of test pieces: Steam bending, CNC router, router, lathe, bag press, finishes, joints.</li> </ul>	<p><b>End of unit tests</b> -Wood &amp; metals -Metals, papers &amp; boards &amp; polymers</p>
<p>Autumn Term 2</p>				
<p>Spring Term 1</p>		<p><b>Papers and Boards</b> Theory:</p> <ul style="list-style-type: none"> <li>● Classification of papers and boards</li> <li>● Performance characteristics of papers and boards</li> <li>● Stock forms</li> <li>● Finishing and printing</li> <li>● Forming processes</li> </ul> <p><b>Design Theory</b></p> <ul style="list-style-type: none"> <li>● Design styles and movements</li> <li>● Designers and their work</li> </ul>	<p><b>Polymers</b> Theory:</p> <ul style="list-style-type: none"> <li>● Classification of polymers</li> <li>● Performance characteristics of polymers (+ types)</li> <li>● Stock forms</li> <li>● Property Enhancement</li> <li>● Forming processes</li> </ul> <p>Practical skills:</p> <ul style="list-style-type: none"> <li>● Experiment with a range of plastics manufacturing techniques</li> </ul>	
<p>Spring Term 2</p>				

		<p><b>How technology and cultural changes can impact on the work of designers</b></p> <ul style="list-style-type: none"> <li>● Socio economic influences</li> <li>● Major developments in technology</li> </ul>	<p>including laser cutting, blow moulding, vacuum forming, line bending, thermoforming, shredding and making of own recycled plastic sheet.</p>	
Summer Terms 1 & 2	Design and making principles 1	<p><b>How technology and cultural changes can impact on the work of designers</b></p> <ul style="list-style-type: none"> <li>● Social, moral and ethical issues.</li> </ul> <p><b>Other</b></p> <ul style="list-style-type: none"> <li>● Onshape skills</li> <li>● Orthographic projection <ul style="list-style-type: none"> <li>○</li> </ul> </li> </ul>	<p><b>Polymers</b></p> <p>Theory cont.:</p> <ul style="list-style-type: none"> <li>● Biodegradable polymers</li> <li>● Elastomers</li> </ul> <p><b>Other</b></p> <ul style="list-style-type: none"> <li>● Design methods and processes</li> <li>● Product development and improvement</li> <li>● Design Processes</li> </ul>	